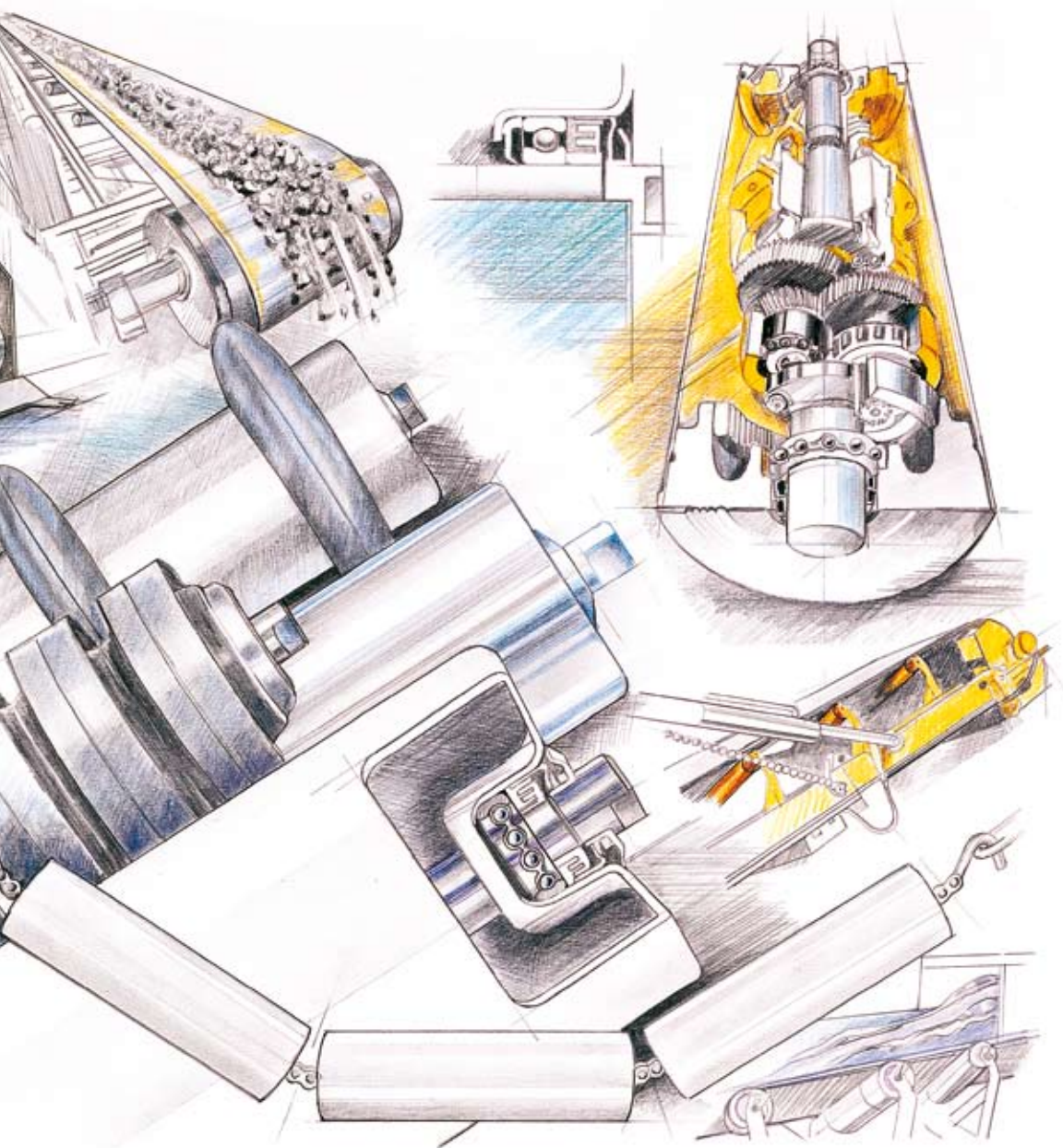


# RULMECA GROUP

**Rollers and components  
for bulk handling**



**INTRODUCTION**



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RULMECA Group  
3 main European production centres



RULLI RULMECA SpA,  
Almè, Italy



RULMECA GERMANY GmbH,  
Aschersleben, Germany



RULMECA GERMANY GmbH,  
Leipzig, Germany



The Company Melco, South Africa, is part of the Rulmecca Group.

### **The Company:**

RULMECA is a family owned, worldwide Group of Companies, with headquarters in Italy and specialising in the development, production and sales of belt conveyor rollers/idlers, motorized pulleys, fabricated pulleys and other components for the worldwide bulk handling industry.

RULMECA have been working since 1962 with conveyor components for the Bulk handling industries and today as a global market leader in rollers and motorized pulleys Rulmecca are working internationally with leading OEM's, Engineering Companies and End Users Groups in the major applications within the handling of bulk materials such as; coal and lignite mining, cement, quarries, tunnelling, power plants installation, ports, salt and fertilisers, sugar plants, recycling and demolition, crushing and screening etc...

### **The market and our commitment**

Market demands of improved efficiency and higher throughput simply do not allow for maintenance stops or breakdowns. The selection of quality rollers and motorized pulleys are more vital than ever to ensure a long troublefree life of the conveyors.

The result of RULMECA's total quality philosophy is evident in the expansion of the group as global market leader.

From research and development to the final product quality control the RULMECA Group's commitment to Quality is always evident and present.

This choice has led to a group-wide policy oriented toward continual investment in manufacturing and technology, in the quality of the materials used and in research and development.

This unwavering commitment has received a positive response from the market.



Worldwide network with own production/sales companies in 10 countries, own sales companies in a further 7 countries, 2 representative offices in Russia and Kazakhstan.





Manufacturing technology



By an ongoing focus on market demands and customer requirements The RULMECA Group offer;

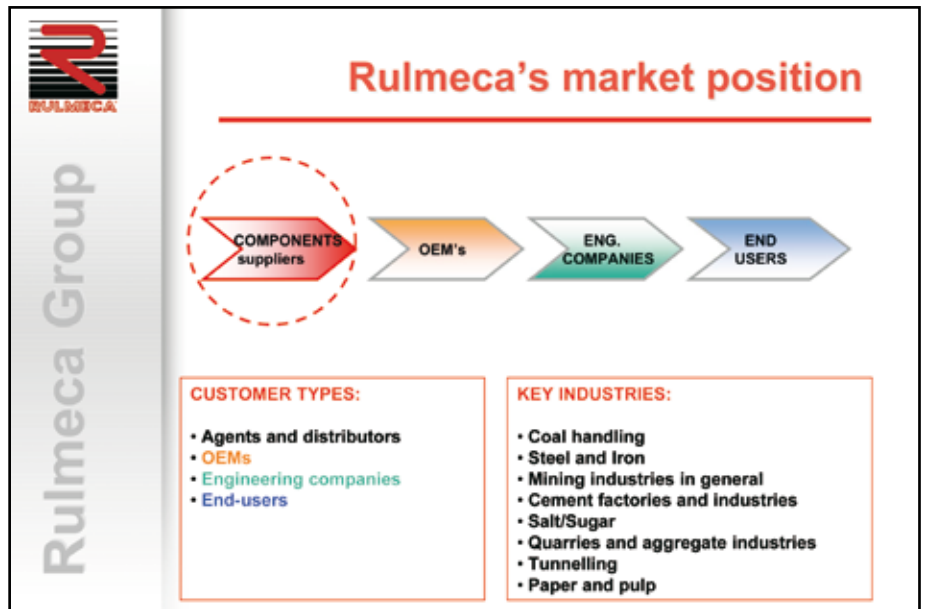
- A close partnership and consultancy to our customers for the correct selection of our products;
- A range of products designed to last;
- Our own Rulmecca company or distribution in all major countries with a strong tradition in bulk handling activities;
- A market leading product range within rollers and motorized pulleys distributed globally;
- A group-wide implemented quality system helps to ensure RULMECA is meeting and exceeding customer expectation;
- A continuously expanding and evolving product range;
- Constant improvement in technical, design, and service;
- A global market reach thanks to 10 manufacturing sales companies, 7 sales companies.

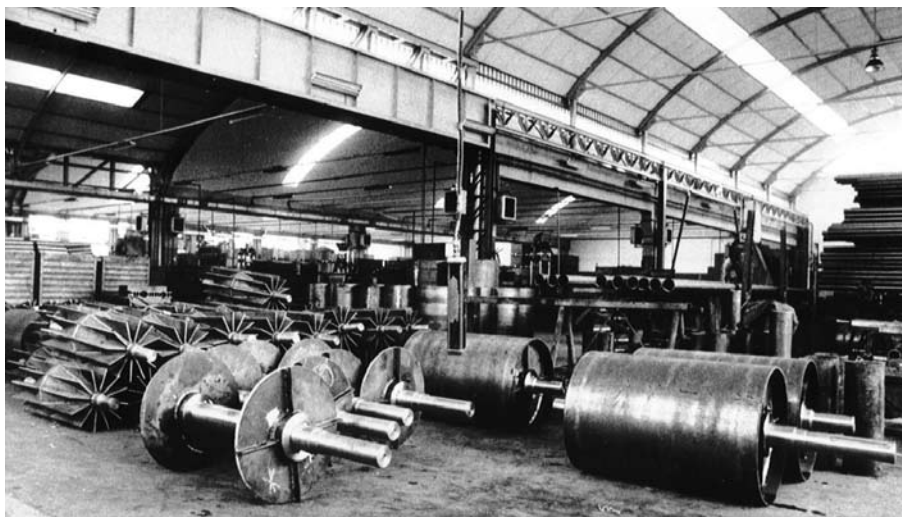
**Market position**

The RULMECA Group is a component manufacturer hereunder incorporating our range of rollers/idlers, motorized pulleys, pulleys and other components such as belt cleaners and covers.

RULMECA believe that by focusing on our “component” business, and by doing it well, we will be able to offer a service and application knowledge second to none. This is all finally to the benefit of our customers.

RULMECA are not entering the market of making or installing conveyors but prefer to stay focused on component business which allows us to bring value to the market and to our customers, whether they may be smaller or larger players in the field of conveyor manufacturing, system engineering or indeed End-Users.





Manufacturing bulk handling products since 1962...

Our commitment to quality is shown in our continuous investments in new production equipment. Most of our companies have the Quality System certified according to ISO 9001:2008 norms.





## PSV Rollers



### MATERIAL SPECIFICATION:

**Shaft** Cold drawn steel; S235JRG2 (EN 10027-1); St 37 (DIN 17100), E 24 (AFNOR NFA 35501). Shaft  $\varnothing$  20, 25, 30, 40 steel bars, ground to ISO h6 or g6 tolerance, in the seal zones or all along the shaft.

**Tube** Welded tube according to DIN 2394, Material S235JRG2 (EN 10027-1); St 37 (DIN 17100), E 24 (AFNOR NFA 35501).

**Bearing housings** Cold pressed and calibrated ISO M7 tolerance. Material: steel for deep drawing EU 10111-DD13.  
Thickness mm: PSV1=2.5, PSV2=3, PSV3/4=3.5, PSV5=4, PSV/7-FHD=5.

**Inner seal** Lip seal; material ISO PA 6 (Nylon 6).

**Bearing** Deep groove precision ball bearings, DIN series 62 and 63. PSV1=6204, PSV2=6205, PSV3=6305, PSV4=6206, PSV5=6306, PSV/7-FHD=6308, C3 or C4 increased clearance.

**Labyrinth seal** Triple lip; material ISO PA 6 (Nylon 6).

**Cover cap** Cold pressed steel for deep drawing EU 10111-DD13.

**Outer seal ring** Rubber sliding V-ring; material anti-abrasive, low friction, anti-ozone NBR nitrile rubber.

**Protective shield** Mechanical protection bushing against rocks and shocks.

Material: POM polymer or alternatively non-corrosive alloy Zama 13 (aluminium 3.9 / 4.3%, copper 0.03%, magnesium 0.03/0.04% all the rest zinc), according to roller types and application corrosiveness grade.

**Lubrication:** Life lubricated at the factory roller assembly with water repellent, anti rust, long life Lithium grease NLGI grade 2 (or 3 on request), type Shell Retinax WB2.

**Roller body protection:** Various protection types are available depending on the market and application. Typical types of protections are:

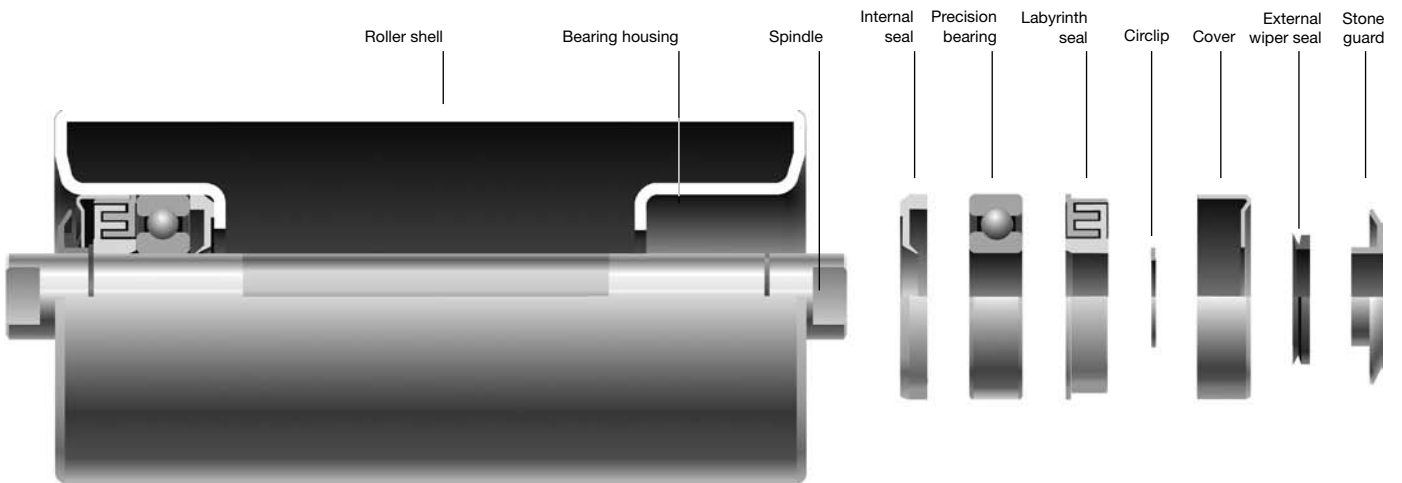
- various types of paint
- zinc plating
- various types of rubber lagging
- anti-rust tectyl oil



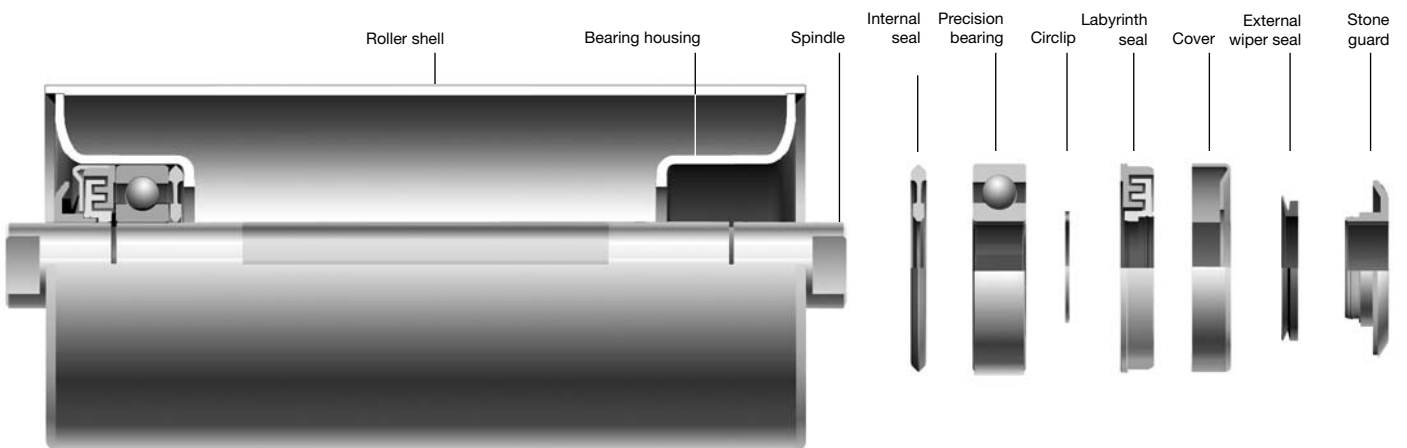
**Main features**

- Rugged construction for heavy duties in all Bulk handling applications
- Precision manufactured with CNC machines to ensure strict tolerances and fits of bearing housing
- Bearing housing design to discharge water and dirt
- Hermetically sealed
- Maintenance free

- Low starting and frictional resistance for efficiencies and power cost savings
- Excellent low eccentricity and balancing for smooth running
- Low noise, even at high speeds
- Manufactured to international standard such as DIN, AFNOR, JIS, CEMA, FEM, BS etc
- Minimum 30.000 theoretical bearing life provided Rulmecca specification is followed



Section of the sealing system for roller types PSV 1, PSV 2, PSV 3, PSV 4 and PSV 5.



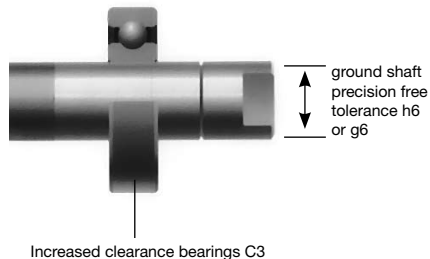
Section of the sealing system for Rulmecca standardized PSV/7-FHD roller.



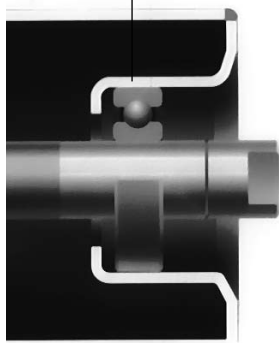


PSV – construction tolerances

Couplings  
 - Shaft / Bearings  
 - Housing / Tube

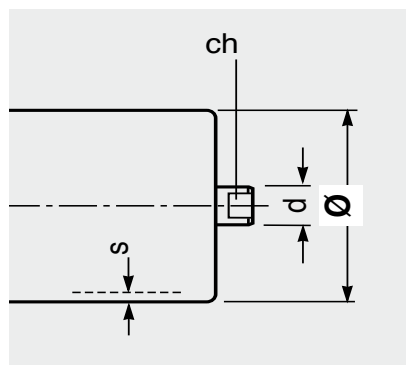


Precision forced tolerance brg./ housing ISO M7 (blocked)



The table indicates the type and diameter of standard rollers in production according to European standards to DIN 15207-ISO 1537.

Upon request rollers may be supplied with varying dimensions, tube thickness end diameters according to standards CEMA, BS, JIS, AFNOR and FEM.



**Programme of production of PSV rollers**

Roller type	Roller diameter		basic design	Shell thickness mm	Bearing Housing thickness	Shaft Diameter	Bearing Size
	mm	inches					
PSV 1	63		N	3	2,5	20	6204 C3
	76	3"	N	3			
	89		N	3			
	102	4"	N	3			
	108		N	3,5			
	114	4,5"	N	3,5			
	127	5"	N	4			
	133		N	4			
	140		N	4			
	PSV 2	76	3"	N			
89			N	3			
102		4"	N	3			
108			N	3,5			
114		4,5"	N	3,5			
127		5"	N	4			
133			N	4			
140		5,5"	N	4			
152		6"	N	4			
159			N	4,5			
PSV 3	89		N	3	3,5	25	6305 C3
	102	4"	N	3			
	108		N	3,5			
	127	5"	N	4			
	133		N	4			
	140	5,5"	N	4			
	152	6"	N	4			
	168		N	4,5			
PSV 4	89		N	3	3,5	30	6206 C3
	102	4"	N	3			
	108		N	3,5			
	127	5"	N	4			
	133		N	4			
	140	5,5"	N	4			
	152	6"	N	4			
	159		N	4,5			
	165	6,5"	N	4			
168		N	4,5				
PSV 5	89		N	3	4	30	6306 C3
	108		N	3,5			
	133		N	4			
	159		N	4,5			
PSV/7-FHD	108		N	4	4	40	6308 C3
	133		N	4			
	159		N	4,5			
	194		N	6,3			
	219		N	6,3			

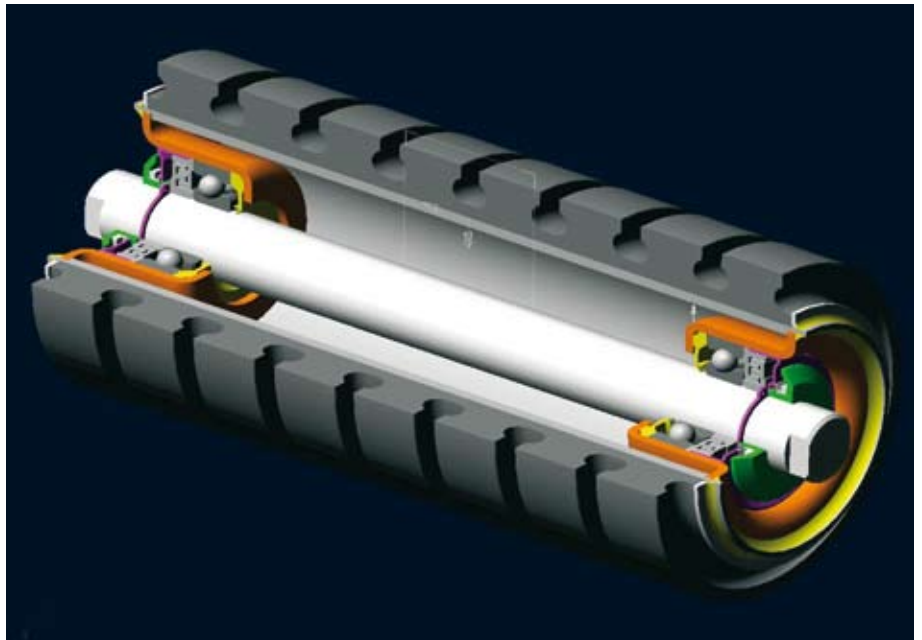
**For full details about types and styles, please request the separate master catalogue "Rollers and components for bulk handling" to our local Rulmecca Company or download it from our web site [www.rulmecca.com](http://www.rulmecca.com)**





## PSV rollers

### Impact rollers



Impact rollers are normally required in areas around transfer points where shock loads need to be absorbed, and to give the belt and the material carried, added protection from damage or degradation.

Rulmeca Impact rollers consist of a base steel roller on which are fitted our own design of shock absorbing rubber impact discs in various sizes held in place by welded retaining rings.

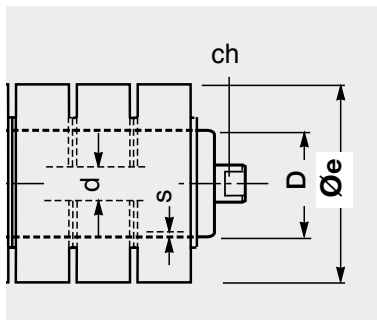




**Programme of production of impact rollers**

basic roller type	D		Ø esec.		spindle		bearing
	mm	s	mm	design	d	ch	
PSV 1	63	3	89	NA	20	14	6204
	63	3	108	NA			
	89	3	133	NA			
	89	3	159	NA			
PSV 2	89	3	133	NA	25	18	6205
	89	3	159	NA			
PSV 3	89	3	133	NA	25	18	6305
	89	3	159	NA			
PSV 4	89	3	133	NA	30	22	6206
	89	3	159	NA			
PSV 5	89	4	133	NA	30	22	6306
	89	4	159	NA			
	108	4	180	NA			
	133	4	194	NA			
	133	4	215	NA			
PSV/7-FHD	108	4	180	NA	40	32	6308
	133	6	194	NA			
	133	6	215	NA			

Material specification of impact rubber rings:  
 rubber type SBR, 75 shore ± 5



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## PSV rollers

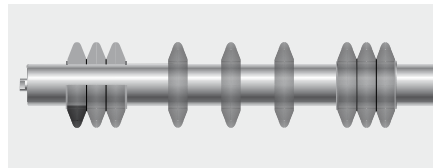
### Return rollers

The straight tracking of the belt may be compromised by the type of conveyed material, specially when this material is sticky and thereby adheres easily to the belt surface. In this case, material is also deposited on the return rollers that support the belt, adding an irregular addition of scale to the roller itself. As a consequence, not only wear and tear of the belt occurs, but forces are brought into play to move the belt away from its correct track.

Return rollers with spaced rubber rings contribute largely to eliminating the build up of scale that forms in certain conditions on the belt surface.

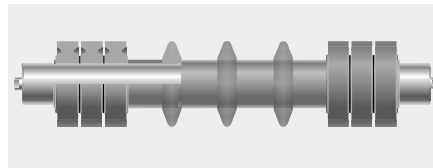
The rings are pointed, assembled at intervals, in the central part of the roller, where they have the scope to break up the scale which normally is present at the belt centre; meanwhile flat rings mounted in groups at the extremities of the belt, support and protect the belt edges, also in cases of limited belt wandering.

Return rollers with rings should not be used as belt tensioning devices.



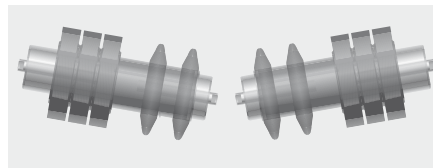
#### Arrangement G

Return rollers with pointed rings spaced in the central part and positioned in sets at the side. Used on belt conveyors of medium capacity.



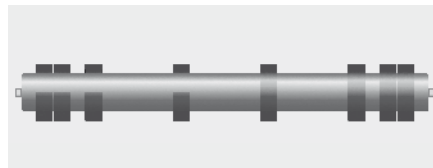
#### Arrangement L

Return rollers used on belt conveyors in high duty plant. They are provided with sets of flat rings, positioned at the roller extremities, and with pointed rings spaced in the central part of the roller.



#### Arrangement C

Return for return transom sets of "V" design format with base rollers from series PSV, with characteristic proportional dimensions to the requirements designed into large belt conveyors.

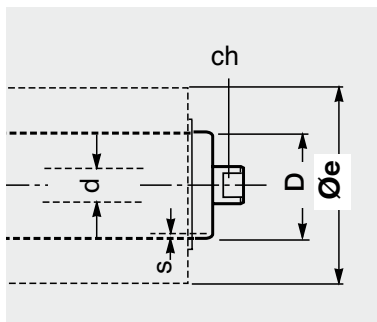


**Arrangement with special flat rubber ring type B for pulp and paper and other industries.**



**Programme of production of return rollers**

Material specification of return rubber rings:  
 rubber type SBR 75 shore  $\pm 5$ .  
 For special applications (paper and pulp)  
 Rulmecca are offering purposely supplied  
 rubber rings with anti-oil type for high  
 durability and anti-acid.



basic roller type	D		Ø esec.		spindle		bearing
	mm	s	mm	design	d	ch	
PSV 1	63	3	108	NG	20	14	6204
	63	3	133	NG			
	63	3	108	NL, NC			
	89	3	133	NL, NC			
	89	3	152	NL, NC			
	89	3	159	NL, NC			
	108	3,5	180	NL, NC			
PSV 2	89	3	133	NL, NC	25	18	6205
	89	3	152	NL, NC			
	89	3	159	NL, NC			
	108	3,5	180	NL, NC			
PSV 4	89	3	133	NL, NC	30	22	6206
	89	3	152	NL, NC			
	89	3	159	NL, NC			
	108	3,5	180	NL, NC			
PSV/7-FHD	108	4	180	NL, NC	40	32	6308

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Choice of roller in relation to load capacity in daN, to diameter, to belt width and speed (for a project bearing life L10h of 30.000 h.)

ROLLER				PSV 1 (spindle ø 20, bearing 6204)								PSV 2 (spindle ø 25, bearing 6205)								PSV 3 (spindle ø 25, bearing 6305)							
Ø mm	Belt Width			belt speed m/s								belt speed m/s								belt speed m/s							
	Arrangements			1	1.5	2	2.5	3	3.5	4	1	1.5	2	2.5	3	3.5	4	4.5	1	1.5	2	2.5	3	3.5	4	4.5	
	C mm																										
89		400	168	179	157	142	132	124																			
		300	500	208	179	157	142	132	124			274	240	218	202	190			404	353	321	298	280				
		400	650	258	179	157	142	132	124			274	240	218	202	190			404	353	321	298	280				
		500	800	323	179	157	142	132	124			274	240	218	202	190			404	353	321	298	280				
		300	650	1000	388	179	157	142	132	124			274	240	218	202	190			404	353	321	298	280			
		800	1200	473	179	157	142	132	124			274	240	218	202	190			404	353	321	298	280				
		400		508	179	157	142	132	124			274	240	218	202	190			404	353	321	298	280				
			1400	538	179	157	142	132	124			274	240	218	202	190			404	353	321	298	280				
		500	1000	608	179	157	142	132	124			274	240	218	202	190			404	353	321	298	280				
		1200	1600	708	173	157	142	132	124			274	240	218	202	190			404	353	321	298	280				
		650		758	161	157	142	132	124			274	240	218	202	190			392	353	321	298	280				
			1400	808	150	150	142	132	124			274	240	218	202	190			367	353	321	298	280				
			1600	908	133	133	133	132	124			274	240	218	202	190			327	327	321	298	280				
		800		958	126	126	126	126	124			274	240	218	202	190			310	310	310	298	280				
		1000		1158	104	104	104	104	104			267	240	218	202	190			259	259	259	259	259				
		1200		1408	85	85	85	85	85			224	224	218	202	190			218	218	218	218	218				
	1400		1608	75	75	75	75	75			201	201	201	201				194	194	194	194	194					
	1600		1808								183	183	183	183				177	177	177	177	177					
108		400	168	191	167	152	141	133	126																		
		300	500	208	191	167	152	141	133	126			293	256	232	216	203	193									
		400	650	258	191	167	152	141	133	126			293	256	232	216	203	193	431	376	342	317	299	284			
		500	800	323	191	167	152	141	133	126			293	256	232	216	203	193	431	376	342	317	299	284			
		300	650	1000	388	191	167	152	141	133	126		293	256	232	216	203	193	431	376	342	317	299	284			
		800	1200	473	191	167	152	141	133	126			293	256	232	216	203	193	431	376	342	317	299	284			
		400		508	191	167	152	141	133	126			293	256	232	216	203	193	431	376	342	317	299	284			
			1400	538	191	167	152	141	133	126			293	256	232	216	203	193	431	376	342	317	299	284			
		500	1000	608	191	167	152	141	133	126			293	256	232	216	203	193	431	376	342	317	299	284			
		1200	1600	708	170	167	152	141	133	126			293	256	232	216	203	193	404	376	342	317	299	284			
		650		758	158	158	152	141	133	126			293	256	232	216	203	193	375	375	342	317	299	284			
			1400	808	147	147	147	141	133	126			293	256	232	216	203	193	351	351	342	317	299	284			
			1600	908	130	130	130	130	130	126			293	256	232	216	203	193	310	310	310	310	299	284			
		800		958	123	123	123	123	123	123			293	256	232	216	203	193	294	294	294	294	294	284			
		1000		1158	101	101	101	101	101	101			249	249	232	216	203	193	242	242	242	242	242	242			
		1200		1408	82	82	82	82	82	82			205	205	205	205	203	193	199	199	199	199	199	199			
	1400		1608	72	72	72	72	72	72			180	180	180	180	180	180	175	175	175	175	175	175				
	1600		1808									161	161	161	161	161			157	157	157	157	157				
133		500	208	205	179	163	151	142	135	129																	
		650	258	205	179	163	151	142	135	129	314	274	249	231	217	207	198										
		800	323	205	179	163	151	142	135	129	314	274	249	231	217	207	198	462	403	366	340	320	305	291			
		300	650	1000	388	205	179	163	151	142	135	129	314	274	249	231	217	207	198	462	403	366	340	320	305	291	
		800	1200	473	205	179	163	151	142	135	129	314	274	249	231	217	207	198	462	403	366	340	320	305	291		
		500	1000	608	205	179	163	151	142	135	129	314	274	249	231	217	207	198	462	403	366	340	320	305	291		
		1800	608	200	179	163	151	142	135	129	314	274	249	231	217	207	198	416	403	366	340	320	305	291			
			708	169	169	163	151	142	135	129	314	274	249	231	217	207	198	397	397	366	340	320	305	291			
		650	2000	758	157	157	157	151	142	135	129	314	274	249	231	217	207	198	368	368	366	340	320	305	291		
		1400		808	146	146	146	146	142	135	129	314	274	249	231	217	207	198	343	343	343	340	320	305	291		
		1600		908	129	129	129	129	129	129	129	310	274	249	231	217	207	198	303	303	303	303	303	305	291		
		800		958	122	122	122	122	122	122	122	293	274	249	231	217	207	198	286	286	286	286	286	286	286		
		1800	1008									278	274	249	231	217	207	198	271	271	271	271	271	271	271		
		2000	1108									278	274	249	231	217	207	198	245	245	245	245	245	245	245		
		1000		1158	99	99	99	99	99	99	99	240	240	240	231	217	207	198	234	234	234	234	234	234	234		
		1200		1408	81	81	81	81	81	81	81	197	197	197	197	197	197	197	192	192	192	192	192	192	192		
	1400		1608	71	71	71	71	71	71	71	172	172	172	172	172	172	172	167	167	167	167	167	167	167			
	1600		1808	63	63	63	63	63	63	63	153	153	153	153	153	153	153	149	149	149	149	149	149	149			
	1800		2008								138	138	138	138	138			134	134	134	134	134					
	2000		2208																								
159		650	258								333	291	264	245	231	220	210	202									
		800	323								333	291	264	245	231	220	210	202	490	428	389	361	340	324	309	297	
		300	650	1000	388	333	291	264	245	231	220	210	202	490	428	389	361	340	324	309	297						
		800	1200	473	333	291	264	245	231	220	210	202	490	428	389	361	340	324	309	297							
		1000	1600	608	333	291	264	245	231	220	210	202	467	428	389	361	340	324	309	297							
		1800	608	200	179	163	151	142	135	129	314	274	249	231	217	207	198	413	419								

Choice of roller in relation to load capacity in daN, to diameter, to belt width and speed (for a project bearing life L10h of 30.000 h.)

PSV 4 (spindle ø 30, bearing 6206)								PSV 5 (spindle ø 30, bearing 6306)								PSV/7-FHD (spindle ø 40, bearing 6308)								ROLLER			
belt speed m/s								belt speed m/s								belt speed m/s								Belt Width Arrangements			
1	1.5	2	2.5	3	3.5	4	5	1	2	3	4	4.5	5	6	1	2	3	4	4.5	5	6	C	mm		Ø		
mm																										mm	
																							168			400	
																							208		300	500	
																							258		400	650	
381	333	302	281	264				549	435	380													323		500	800	
381	333	302	281	264				549	435	380													388	300	650	1000	
381	333	302	281	264				549	435	380													473		800	1200	
381	333	302	281	264				549	435	380													508	400			
381	333	302	281	264				549	435	380													538			1400	
381	333	302	281	264				549	435	380													608	500	1000	1600	
381	333	302	281	264				549	435	380													708		1200		
381	333	302	281	264				549	435	380													758	650			
381	333	302	281	264				549	435	380													808		1400		
381	333	302	281	264				549	435	380													908		1600		
381	333	302	281	264				549	435	380													958	800			
381	333	302	281	264				549	435	380													1158	1000			
381	333	302	281	264				512	435	380													1408	1200			
337	333	302	281	264				337	377	377													1608	1400			
233	233	233	233	233				233	233	233													1808	1600			
																							168			400	
																							208		300	500	
																							258		400	650	
																							323		500	800	
406	355	323	299	282	268			585	465	406	369				853	677	592	538					388	300	650	1000	
406	355	323	299	282	268			585	465	406	369				853	677	592	538					473		800	1200	
406	355	323	299	282	268			585	465	406	369				853	677	592	538					508	400			
406	355	323	299	282	268			585	465	406	369				853	677	592	538					538			1400	
406	355	323	299	282	268			585	465	406	369				853	677	592	538					608	500	1000	1600	
406	355	323	299	282	268			585	465	406	369				853	677	592	538					708		1200		
406	355	323	299	282	268			585	465	406	369				853	677	592	538					758	650			
406	355	323	299	282	268			585	465	406	369				853	677	592	538					808		1400		
406	355	323	299	282	268			585	465	406	369				853	677	592	538					908		1600		
406	355	323	299	282	268			585	465	406	369				853	677	592	538					958	800			
406	355	323	299	282	268			529	465	406	369				853	677	592	538					1158	1000			
406	355	323	299	282	268			442	442	406	369				853	677	592	538					1408	1200			
402	355	323	299	282	268			393	393	393	369				743	677	592	538					1608	1400			
366	355	323	299	282	268			356	356	356					587	587	587	538					1808	1600			
																							208			500	
																							258			650	
																							323		500	800	
436	381	346	321	302	287	274		627	498	435	395	380	367		915	726	634	576	554	535			388		650	1000	
436	381	346	321	302	287	274		627	498	435	395	380	367		915	726	634	576	554	535			473		800	1200	
436	381	346	321	302	287	274		627	498	435	395	380	367		915	726	634	576	554	535			538			1400	
436	381	346	321	302	287	274		627	498	435	395	380	367		915	726	634	576	554	535			608	500	1000	1600	
436	381	346	321	302	287	274		627	498	435	395	380	367		915	726	634	576	554	535			678			1800	
436	381	346	321	302	287	274		627	498	435	395	380	367		915	726	634	576	554	535			708		1200		
436	381	346	321	302	287	274		627	498	435	395	380	367		915	726	634	576	554	535			758	650		2000	
436	381	346	321	302	287	274		627	498	435	395	380	367		915	726	634	576	554	535			808		1400		
436	381	346	321	302	287	274		627	498	435	395	380	367		915	726	634	576	554	535			908		1600		
436	381	346	321	302	287	274		608	498	435	395	380	367		915	726	634	576	554	535			958	800			
436	381	346	321	302	287	274		577	498	435	395	380	367		915	726	634	576	554	535			1008		1800		
436	381	346	321	302	287	274		524	498	435	395	380	367		915	726	634	576	554	535			1108		2000		
436	381	346	321	302	287	274		501	498	435	395	380	367		915	726	634	576	554	535			1158	1000			
412	381	346	321	302	287	274		412	412	412	395	380	367		915	726	634	576	554	535			1408	1200			
363	363	346	321	302	287	274		363	363	363	363	363	363		915	726	634	576	554	535			1608	1400			
324	324	324	321	302	287	274		324	324	324	324	324		915	726	634	576	554	535			1808	1600				
294	294	294	294	294	287			294	294	294	294	294		908	726	634	576	554	535			2008	1800				
270	270	270	270	270				270	270	270	270	270		750	726	634	576	554				2208	2000				
																							258			650	
																							323			800	
462	404	367	341	321	305	291	270	666	528	462	419	403	389	366	971	771	673	612	588	568	534	388	650	1000			
462	404	367	341	321	305	291	270	666	528	462	419	403	389	366	971	771	673	612	588	568	534	473	800	1200			
462	404	367	341	321	305	291	270	666	528	462	419	403	389	366	971	771	673	612	588	568	534	538		1400			
462	404	367	341	321	305	291	270	666	528	462	419	403	389	366	971	771	673	612	588	568	534	608	1000	1600			
462	404	367	341	321	305	291	270	666	528	462	419	403	389	366	971	771	673	612	588	568	534	678		1800			
462	404	367	341	321	305	291	270	666	528	462	419	403	389	366	971	771	673	612	588	568	534	708		1200			
462	404	367	341	321	305	291	270	666	528	462	419	403	389	366	971	771	673	612	588	568	534	758	650	2000			
462	404	367	341	321	305	291	270	666	528	462	419	403	389	366	971	771	673	612	588	568	534	808					



## DSK rollers extra heavy duty

### **PRECISMECA - MONTAN / RULMECA GROUP Heavy Duty Rollers**

are designed for heavy duty open mining applications. Thanks to the high quality machined parts and a non contacting multi-chamber labyrinth seal, the rollers run with a whisper. The high quality machining process is a guarantee for a long service life of the PRECISMECA - MONTAN rollers - 8 years in operation 24 hours a day is not a rarity. Return rollers with rings should not be used as belt tensioning devices.



### **MATERIAL SPECIFICATION**

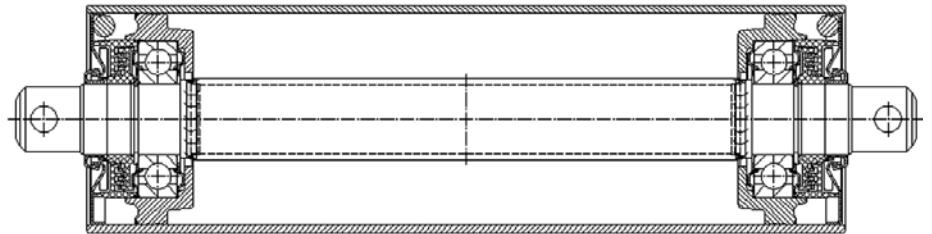
<b>Tubes:</b>	acc. DIN 2458 with tight tolerances, electrically welded; ST37 acc. DIN 17100
<b>Shafts:</b>	ST 37
<b>Housings:</b>	massive housing made of forged steel
<b>Bearing/Sealing Assembly:</b>	deep groove precision ball bearings (21310 / 21312 / 6310 / 6312 / 6316 / 6318); acc. DIN 625 triple lip labyrinth heavy duty circlip cover cap - cold pressed deep drawn steel to DIN 1623/1624 and zinc plated
<b>Lubrication:</b>	permanent for roller life; lithium grease NLGI 2
<b>Corrosion protection:</b>	wax oil, type resost 7-3; colour painting on request





### Main Features and Benefits

- All DSK rollers available with different shell thicknesses
- All DSK rollers available in mass limited version
- Massive bearing brackets
- The use of precision steel tubes guarantees best radial run-out
- DSK rollers and garlands are available for belt speed up to 10 m/sec.
- Best suitable for impact roller
- Different laggings for hard and aggressive applications available
- Additional sealing for extreme environments deliverable



### Programme of DSK roller series (standard)

Roller type	tube dia.	spindle dia.	bearing
DSK	133	50	6310
		60	6312
	194	50	6310
		60	6312
		60	21312
	219	50	6310
		60	6312
		60	21312
		80	6316

additional sizes on request

**For full details about types and styles, please request the separate master catalogue to our local PRECISMECA / Rulmeca Company or download it from our web site [www.precismeca.net](http://www.precismeca.net)**





## PL Rollers

**PL2 - 20mm shafts**

**PL3 - 20mm shafts**

**PL4 - 20mm shaft**

**90,110 & Dia**



There are some environments where extremely corrosive elements are a major hindrance to the smooth running of belt conveyors. Those such as in the production of **salt, various chemicals, fertilisers and some marine conditions** require a reliable and corrosive resistant roller. It must demonstrate a particular resistance to high humidity and water and to the aggressive material that is to be conveyed. The use of plastic/PVC materials in our range of PL rollers is an excellent and economic alternative to traditional roller materials such as stainless steel, bronze and aluminium in aggressive and poor environments.

Testing and actual plant trials have demonstrated the efficiency and versatility

of these rollers with their excellent low running resistance in severe conditions, especially when one considers their low purchase and maintenance costs.

PL rollers can be supplied with shafts that are completely covered with polypropylene caps (PL2) or with exposed shafts (PL4) where they can then be machined to be utilised as replacements for existing steel rollers.

Stainless steel shafts are commonly supplied in these instances.

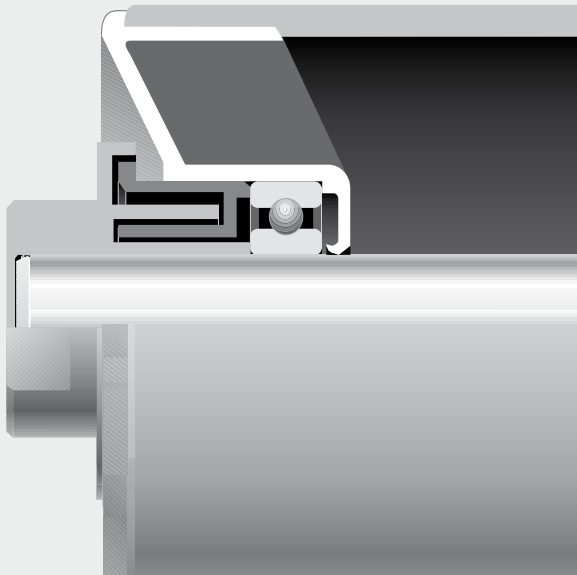
PL rollers can also be manufactured with steel shells and be supplied complete with end supported, variable angle or fabricated bracket type transom sets.

Recommended functioning temperatures are -10 Deg to +50 Deg C.

Roller Type	Diameter mm	basic design	Shell thickness mm	Spindle d ch	Bearings	Note
PL 2	90	V	4.3	20 30	6204	with tube in rigid PVC colour grey RAL 7030 spindle steel S 235 JR (Fe360, DIN St 37), slotted bushes in polypropylene fiberglass charged
	110	V	5.3			
	140	V	8.5			
PL 3	90	V	4.3	20 14	6204	with tube in rigid PVC colour grey RAL 7030 spindle steel S 235 JR (Fe360, DIN St 37), slotted bushes in polypropylene fiberglass charged
	110	V	5.3			
	140	V	8.5			
PL 4	90	V	4.3	20 14	6204	with tube in rigid PVC colour grey RAL 7030 spindle steel S 235 JR (Fe360, DIN St 37) with slots ch 14
	110	V	5.3			
	140	V	8.5			

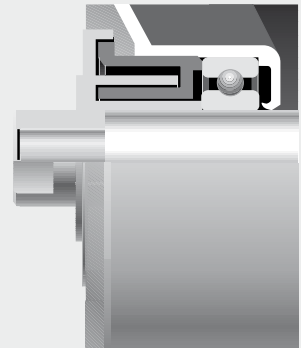


Material specification for roller shell:  
high quality PVC tube of a large thickness  
resistant to low and high temperatures.

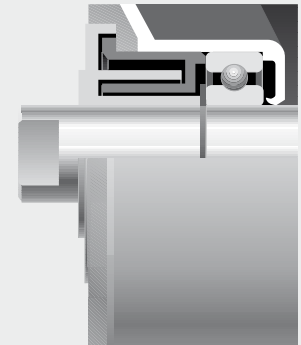


Section through seal PL2  
with bush ch=30

Section through  
seal PL3  
with bush ch=14



Section through  
seal PL4  
with through  
steel shaft ch=14



**For full details about types and styles, please request the separate master catalogue "Rollers and components for bulk handling" to our local Rulmecca Company or download it from our web site [www.rulmecca.com](http://www.rulmecca.com)**



# Top Roller

## New thermoplastic roller



High Density Polyethylene (HDPE) tube, black, colour, long fitting between the tube and the bearing housing



Bearing housing: Homopolymer Acetal Resin (POM), colour: yellow RAL 1018



Sealing system: standard contact-less execution



Sealing system: optional hermetic execution



Rulmecca is proud to introduce the new TOP roller, a totally thermoplastic roller with the exception of the steel in the ball bearing and the shaft.

### FEATURES AND BENEFITS:

- lower weight with respect to a steel roller (about 50%). That means:
  - lower power consumption during start/stop operation of the belt conveyor and therefore reduction of power requirements on the plant;
  - easier mounting/maintenance operations, preventing back injuries of the operator and guaranteeing a safer intervention, especially in application where roller mounting or replacement might be critical (suspended belt conveyor, difficult access, long conveyors...)
  - easier/cheaper transportation
- low level of abrasion and corrosion of the roller (wear resistant). That means:
  - longer life of the roller;

- lower maintenance of the whole plant.
- belt friendly, since HDPE tube will not wear the belt
- high resistance to chemical agents. That means:
  - the roller will not rust
  - the roller is suitable for a wide variety of applications
- low noise emission (due to thermoplastic noise absorption)
- self-cleaning roller surface. That means:
  - prevention of build up of material, main cause of belt mis-tracking
  - less spillage from the belt
- low running resistance sealing system. That means:
  - lower motor torque need in conveyor starts
  - lower motor power size
  - reduction of energy consumption of the belt conveyor (added effect to that of the lower weight)
  - lower belt consumption

Available types	89 mm diameter, 20 mm shaft, 6204 bearings 108 mm diameter, 20 mm shaft, 6204 bearings 127 mm diameter, 25 mm shaft, 6205 bearings (*) 133 mm diameter, 25 mm shaft, 6205 bearings
Load capacity (**)	Designed for light/medium duty applications
Sealing	Available in both hermetic and contactless execution, therefore guaranteeing excellent performance in presence of any kind of contaminant
<u>Material:</u> Tube Bearing Housing	High Density Polyethylene (HDPE) Homopolymer Acetal Resin (POM)
Working temperatures	-25°C, +50°C
Applications	Suitable for use in a wide variety of applications and products such as cement, coal, gravel, fertilisers, ports, chemicals and many others

(\*) available starting from Mid-2010  
(\*\*) contact your local Rulmecca Company for information and updates



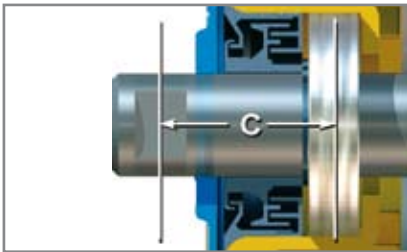


# Supreme

## Heavy Duty Corrosion and Abrasion Resistant Roller



Ultra thick abrasion and corrosion resistant 12mm HDPE sleeve.



Reduced "C" dimension decreases load induced shaft deflection.



Web reinforced, sturdy polymer bearing housing, smaller diameter results in higher strength ratio.



Unique large diameter stoneguard with integral labyrinth design minimises possibility of being jammed by spilt material.



Melco's well-proven multi part Labyrinth seal.

### The Melco SUPREME boasts a wide range of superior advantages, features & benefits:

- Steel tube ensures adequate mechanical strength for heavy duty loads
- Ultra thick abrasion and corrosion resistant 12mm thick HDPE sleeve
- HDPE contains carbon black increasing ultra violet resistance
- Steel and HDPE tube combination provides significantly reduced weight
- The bearing housing effectively locks the HDPE tube in position preventing movement along the steel tube
- Minimum "C dimension" decreases load induced shaft deflection
- Unique large diameter stoneguard with integral labyrinth design minimises possibility of being jammed by spilt material, and provides additional protection from water and dust

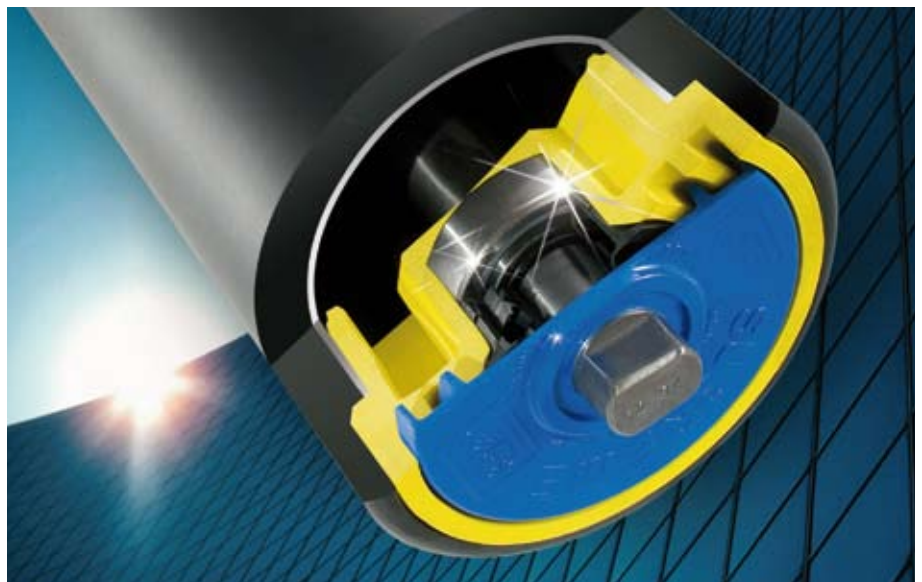
- Multi part labyrinth seal protects the bearing from ingress of contaminants
- Ultra low running resistance and break away mass reduces power consumption for start up and continuous operation
- Machined finish ensures LOW run-out, minimizing vibration and noise emission
- Castellated HDPE tube is a tight interference fit on the steel tube

### Typical applications

- Mining – Platinum, Copper, Uranium, Iron Ore, Gold, Diamonds, Sand
- Coal Process Plants
- Coal Fired Power Stations
- Import/Export Terminals
- Belt scales
- Aluminium Smelters
- Steel Plants
- Fertilizer Plants

### Programme of production

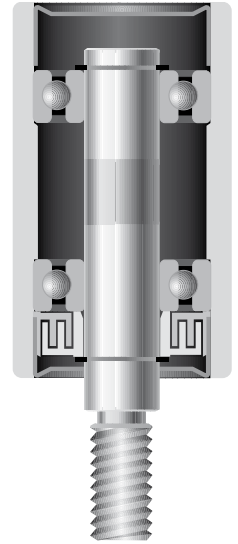
	SPRM / 2	SPRM / 3	SPRM / 5
shaft ø mm	25	25	30
bearings	6205	6305	6306
Diameter ø mm	127, 133, 152, 159	127, 133	152, 159







## Guide Rollers



The guide rollers we offer vary according to the different local market needs. Please contact our local Rulmecca Company to receive full details about the types and dimensions we propose.





# Roller request form

Customer

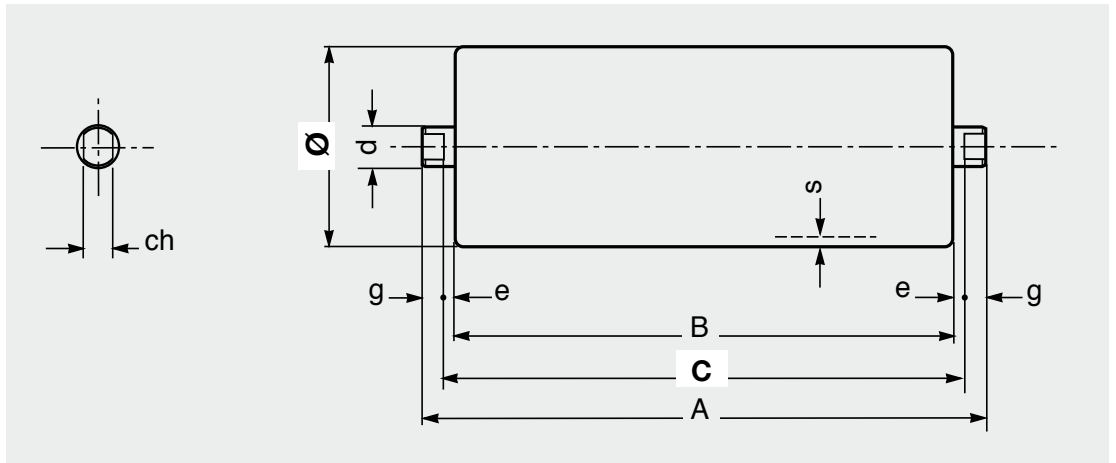
Tel:

Quantity

Description

Date

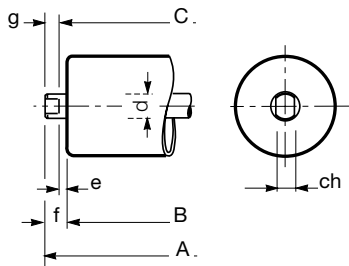
## Complete dimensions indicated



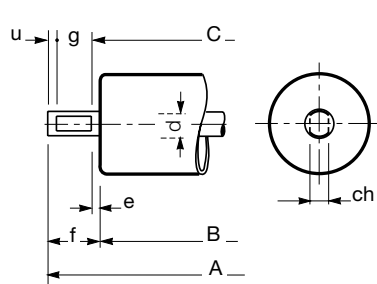
## Spindle end types

Below spindle executions are only our standards and various spindle designs are available on request:

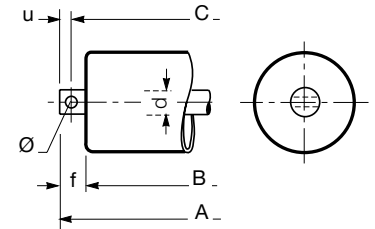
### with slots



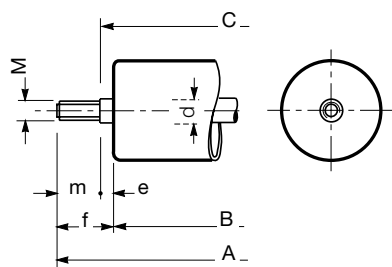
### with internal flats



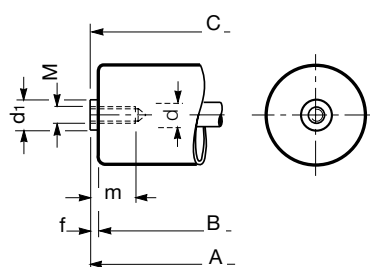
### with hole (for garlands)



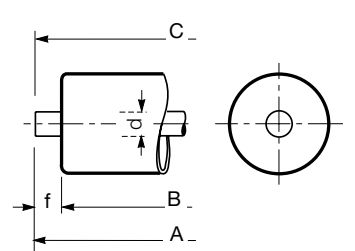
### male threaded



### with female thread



### plain





## Rulmeca transoms and brackets

The production program of transoms and brackets complies with internationally recognized standards such as DIN 22107, CEMA, AFNOR, JIS, BS, ISO-FEM.

The experience of Rulmeca in the Global Bulk Handling markets means that we have a world of experience in transom designs and transom protection for all kind of industries.

The production includes carrying, impact and return transoms and supports.

The transoms can be manufactured in trough angles ranging from 10 up to 60 degrees.

Transition and self-aligning transoms in every design are also available.

Bearing in mind that transoms are typically designed for the local markets to local standards, our designers and engineers are ready to help you with finding the right transom solution also for your application.

Below a few examples of the standard transoms we manufacture:



Medium upper troughing set



Heavy upper troughing set



Extra heavy upper troughing set



Self-centralising troughing set for loaded strand of belt



Self-centralising troughing set for return belt



Return set "V"



2 and 3 roll troughing sets



5 roll troughing set



Variable angle troughing set



## Motorized Pulleys for Belt Conveyors

The Rulmeca Motorized Pulley was first produced in 1953 specifically for belt conveyor systems.

The aim was to produce an extremely compact, totally enclosed and highly efficient belt conveyor drive, resistant to dust, water, oil, grease or harmful substances. A Motorized Pulley which would be quick and simple to install and would require virtually no maintenance.

These aims were achieved and today the Rulmeca Motorized Pulley is considered to be one of the most reliable and effective belt conveyor drives available throughout the world.

The Motorized Pulley is a highly efficient geared motor drive, which is hermetically sealed within a steel cylindrical shell.

The shell, which is usually crowned to ensure central belt tracking, is fitted with

bearing housings incorporating precision bearings, double lipped seals and rotates about a static pair of shafts.

The motor stator is fixed to the shafts and the motor winding cables pass through one of the shafts, eliminating the need for slip rings and brushes.

The squirrel cage induction motor, manufactured in steel laminate, is machined concentric to high tolerances and designed to give 200% starting torque for 3 phase versions.

The rotor pinion is coupled directly to the gearbox.

The gearbox transmits torque to the shell through a geared rim and provides a highly efficiency motor with very little frictional losses.

The Motorized Pulley is oil filled, which acts as both a lubricant and coolant. Heat is dissipated through the shell and the conveyor belt.

All vital parts are CNC machined!

The Rulmeca Motorized Pulley is supplied as standard with:

- Machined mild steel crowned shell.
- Electric motor manufactured in accordance with IEC 34-1 (EN60034-1), (VDE 0530).
- Class F insulation according to IEC 34-1 (EN60034-1), (VDE 0530).
- Most international voltages.
- Standard voltages supplied with  $\pm 10\%$  tolerance in accordance with IEC 38.
- Factory oil filled and tested.
- Degree of protection IP66/67 (EN60034-1).

Rulmeca Motorized Pulleys are manufactured according to the Council Directives of the European Communities.

The CE-marking is according to Directive 2006/95/EC relating to electrical equipment and according to Directive 2004/108/EC relating to electrical magnetic compatibility and amendments.







### Standard Range of Pulley sizes

Shell Diameter	Reference	Power Range (kW)	Speed Range (Mtr/sec)
138	138i	0.09 to 1.00	0.05 to 1.25
165	165i	0.15 to 2.2	0.06 to 2.00
216	220M/220H	0.37 to 5.5	0.13 to 2.50
320	320L/320M/320H	0.75 to 7.5	0.13 to 2.50
400	400L/400M/400H	2.2 to 15.0	0.16 to 3.15
500	500L/500M/500H	2.2 to 22.0	0.20 to 3.15
630	630M/630H	5.5 to 55.0	0.63 to 4.00
800	800M/800H/800HD	22.0 to 132.0	1.00 to 4.50
1000	1000HD	160.0 to 250.0	2.50 to 5.50

Please contact Rulmecca for options and advice on the following;

- Rubber or Ceramic lagging
- Rust free and stainless steel options
- Brakes and backstops
- Special electrical and temperature requirements
- Any other special environments or applications you would like us to consider.

**For full details, please request the catalogue "Motorized Pulleys" to our local Rulmecca Company or download it from our web site [www.rulmecca.com](http://www.rulmecca.com)**



## Fabricated Conveyor Pulleys

Rulmecca Belt Pulleys are produced generally according to customers' requests. The main designs and calculations are based on the FEM method and all drawings are produced on CAD systems.

Rulmecca offer the following types of Belt Pulleys for use in bulk handling conveyors.

### **Drive Pulley ATN & Idler Pulley UTN – With Friction Locked Shafts**

For high belt tension applications with removable shafts

### **Drive Pulley ATS & Idler Pulley UTS – With Welded Shafts**

For lower belt tension applications with fixed shafts

Rulmecca Belt Pulleys mainly consist of:

#### **Pulley Shell:**

Rolled from flat plate and machined Crowned or Parallel.  
Standard 220mm to 1000mm Diameter and up to 4000mm face width.

#### **Rubber Lagging:**

Smooth or grooved pattern finish, either hot or cold vulcanised to various shore hardnesses.  
Many kinds of Ceramic finishes.

#### **Shaft:**

Single or double-ended drive shafts.  
Shrink fitting disc or keyless friction lock assemblies in connection with solid end discs.

#### **Bearings:**

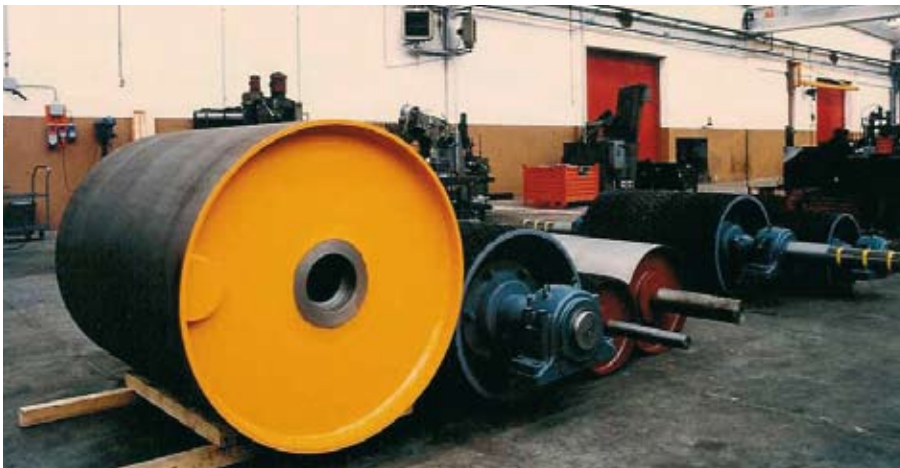
Fitted with Pillow bearings, sliding bearings or flange bearings from known suppliers.  
Sealing systems according to each application.

#### **Corrosion Protection:**

The paint coat will be selected according to the application.  
Shaft ends are temporary protected against corrosion.

#### **General:**

All pulleys are statically balanced.  
Dynamic balancing is available on request.



**For full details about types and styles please contact our local Rulmecca Company.**



## Conveyor covers

As regulations to control environmental conditions become more stringent, the need to enclose conveyors and minimise noise and dust release to the atmosphere has increased. The use of conveyor covers has the added benefit of;

- Protecting the material carried from contamination
- Protects the belt from the sun and bad weather
- Provides better health and safety conditions for operators

Fitting Rulmecca conveyor covers has the further advantages of;

- Being light, yet rigid and easy to fit to most existing structures
- Less cost than other systems or materials
- Less maintenance
- Has many options/different arrangements such as inspection covers, hinged sections and various quick release fittings
- Provides a better integration into the landscape

### Conveyor Covers in Steel



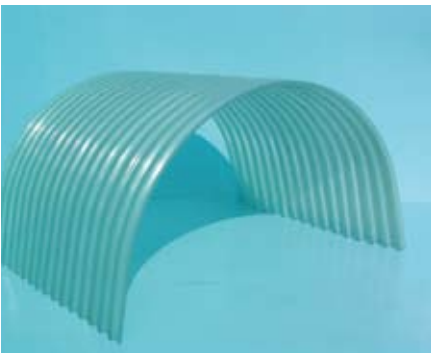
These covers are made from galvanised sheet steel corrugated sections in usable pitches of 1064mm.

They are self supporting, safe, easy to install and adjustable to almost any structure.

On request they can be supplied in other materials or finished with special paint.

They are available for all belt widths and supporting structure and can be supplied with opening windows for inspection, as well as removable sections and ventilated covers for hot environmental conditions. They are maintenance free.

### Conveyor Covers in PVC



Plastic covers are made of pre-formed anti-shock, neutral colour, transparent PVC in usable pitches of 1050mm. Thanks to the characteristics of the material, they are light, transparent, anti-corrosive and with a smooth surface. Above all they are easy to adapt to any conveyor.

Apart from their resistance to corrosion they are classified "NON FLAMMABLE" to DIN 4102. Notwithstanding this property of self-extinguishing, the limit to the use of PVC covers in hot areas should not exceed 65° C.

**For full details about types and styles, please request the separate "Cover" catalogue to our local Rulmecca Company or download it from our web site [www.rulmecca.com](http://www.rulmecca.com)**



## Belt cleaners

The problem of conveyed material adhering to the conveyor belt occurs frequently with wet or sticky material, resulting in frequent downtime for maintenance and clean-up with consequent loss of production.

The use of cleaning equipment has become an indispensable requirement to assure general plant efficiency and to reduce the periods of service needed for maintenance.

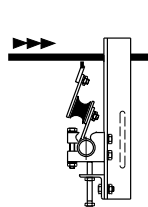
The belt cleaners proposed by Rulmecca may be used for each type of application. They are well known for their efficiency, for ease of installation, for their project simplicity and economy of use.



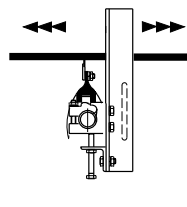
### Our standard belt cleaners

Cleaner type	For belt width mm	Characteristics
P	350 ÷ 2200	For unidirectional belts
R	350 ÷ 2200	For reversible belts
H	350 ÷ 2200	For reversible belts and tangential applications
D	350 ÷ 2200	For uni-directional belts

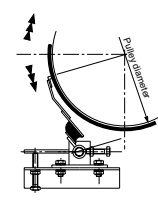
On request belt widths larger than those indicated or for special applications may be supplied.



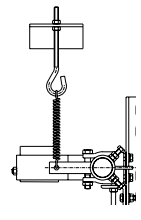
Type P



Type R



Type H



Type D

**For full details about types and styles, please request the separate master catalogue "Rollers and components for bulk handling" to our local Rulmecca Company or download it from our web site [www.rulmecca.com](http://www.rulmecca.com)**





## Examples of applications





# RULMECA GROUP Worldwide Organisation



## Headquarter

Italy  
RULLI RULMECA S.P.A.  
Tel. +39 035 4300 111  
export@rulmeca.it  
www.rulmeca.com

## Africa

South Africa  
MELCO Conveyor Equipment  
Tel. + 27 11 255 1600  
conveyors@melco.co.za  
www.melcoconveyors.com

## Asia

China  
RULMECA (TIANJIN) CO., LTD.  
陆美嘉(天津)滚筒有限公司  
Tel. +86 22 2388 8628  
sales@rulmeca.com.cn  
www.rulmeca.com.cn

Indonesia  
RULMECA THAILAND CO. LTD.  
TEL. +6221 2555 5828  
suwarno.kie@rulmecaIndonesia.com

Thailand  
RULMECA THAILAND CO. LTD.  
Tel. +66 2 337 0297  
th-sales@rulmeca.co.th

## Europe

Denmark  
RULMECA A/S  
Tel. +45 36 776755  
dk@rulmeca.com

Finland  
RULMECA OY  
Tel. +358 9 2243 5510  
msarjokoski@rulmeca.com

France  
PRÉCISMÉCA  
Equipements de Manutention  
Tel. +33 3 88 71 58 00  
info.france@rulmeca.com

Germany  
RULMECA GERMANY GmbH  
Aschersleben  
Tel. +49 (0) 3473 956-0  
faa@rulmeca.com  
www.rulmeca.de

RULMECA GERMANY GmbH  
Leipzig  
Tel. +49 341 339 898-10  
vertrieb.le@rulmeca.com  
www.rulmeca.de

Great Britain  
RULMECA UK Ltd  
Tel. +44 1536 748525  
uk@rulmeca.com

Kazakhstan  
RULMECA GERMANY GmbH  
Representative office  
Tel. +7 71835 492 98  
baubakirova@mail.ru  
www.rulmeca.de

Portugal  
RULMECA  
DE PORTUGAL, LDA  
Tel. +351 275 330780  
rulmeca@rulmeca-interroll.pt

Russia  
RULMECA GERMANY GmbH  
Büro Moskau:  
Tel. +7 499 132 37 74  
faamsk@com2com.ru  
www.rulmeca.de

Spain  
RULMECA ESPAÑA S.L.U.  
Tel. +34 93 544 91 99  
espana@rulmeca.com

Sweden  
RULMECA A/S  
Tel. +46 511 160 27  
handersson@rulmeca.com

## North & South America

Canada  
PRECISMECA LIMITED  
Tel. +1 780 955 2733  
sales@precismeca.ab.ca  
www.precismeca.ab.ca

USA  
MELCO, LLC  
Tel. +1 919 663 2222  
stevenb@melco-usa.com  
www.melcoconveyors.com

RULMECA Corporation  
Tel. +1 910 794 9294  
mgawinski@rulmecacorp.com  
www.rulmecacorp.com

Venezuela  
INDUSTRIAS RULMECA S.A.  
Tel. +58 241 833 62 49  
rulmeca@cantv.net

For full details about our range of products, please request our separate master catalogues:

- Rollers and components for bulk handling
- Motorized Pulleys for belt conveyors

or visit our web site [www.rulmeca.com](http://www.rulmeca.com)











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**RULLI RULMECA S.P.A**

Via A.Toscanini, 1  
24011 ALME' (BG) Italy  
Tel. +39 035 4300111  
Fax +39 035 545700  
[export@rulmecca.it](mailto:export@rulmecca.it)

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